ought to be of the simplest kind, and the size of the wire and insulation of same should be carefully looked after. I think the insulation of wires in armatures is at present one of the weakest points in the motor.

The armature gears should have a wide face, and run in oil. The armature shaft ought to be of ample diameter, and there is nothing gained by having the keyway too small for the securing of the commutator to the shaft. The commutator should be carefully insulated, so that there will be no grounds between it and the cast. The box in which the gear runs ought to be constructed of copper, or some light material that is somewhat flexible, so that if struck from the outside it will bend rather than break. The fields should also be wound with a wire of better insulation, and of ample size to take the current. Of course, in this particular, I do not intend that the wire of either the field or armature should be great enough to take more horse power than ought to be used by the machine. To my mind it is very desirable to have the armature in such a condition that it can be readily taken out from the machine and put in again.

One of the serious disadvantages to operators of electric roads is the expensive labor necessary in winding the armatures and fields, also in regard to high priced mechanics who ought to be employed to attend to the machines. There is nothing gained in employing a cheap class of labor to handle an electric equipment either as electricians, amature or field men or mechanics. This proposition is a self evident truth, as can readily be observed in many roads now in operation.

At present I think the single reduction motor is the nearest perfection of any on the market.

I think it very desirable that the electric companies should devote some time to the perfection of an electric brake to stop the car with the same power that runs it. This could be readily done and would be a satisfactory improvement.

Electric heaters are now used in quite a number of places and I think will prove quite satisfactory.

I have noticed electric signal bells on some of the cars, and they seem to work very well.

For a dasher gong on a motor car I am in favor of a foot tread, as in testing an electric gong we found that men used it altogether too freely.

I am in favor of an oil head-light one that can be removed easily, so that in the event of a trolley being broken or anything happening to the electric part of the car, or a light is desired underneath the car, the oil head-light can be used to better advantage than the electric. There ought also to be one oil light in every car for the same purpose. There is no reason why an electric fare register cannot be made to work successfully.

The durability of the motor is a question which requires very careful attention. The single reduction motor when properly looked after, ought to last for many years. We have had one in operation for over 10 months and it appears to be in as good condition as when it first went on the road. The car should be of moderate size, constructed with all modern convenience but without fancy decorations or any unnecessary display.

The cars should be run on frequent headway and at all hours of the day and night, at as high a rate of speed as the civic authorities will permit. The noise of the motors has been very largely done away with, and by careful attention the old counter shaft machines can be used until worn out by simply covering the gearing with an oil box, and by not attempting to run them too many miles without inspection.

A residence at Peterboro has been fitted with electric lighting apparatus.

An unprofitable warfare is being waged between the rival electric light companies in Stratford.


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